



# UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

## NATIONAL EXPOSURE RESEARCH LABORATORY

HUMAN EXPOSURE & ATMOSPHERIC SCIENCES DIVISION (MD-D205-03)

Research Triangle Park, NC 27711

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Office of  
Research and Development

## LIST OF DESIGNATED REFERENCE AND EQUIVALENT METHODS

**Issue Date: April 3, 2002**

([www.epa.gov/ttn/amtic/criteria.html](http://www.epa.gov/ttn/amtic/criteria.html))

These methods for measuring ambient concentrations of specified air pollutants have been designated as "reference methods" or "equivalent methods" in accordance with Title 40, Part 53 of the Code of Federal Regulations (40 CFR Part 53). Subject to any limitations (e.g., operating range or temperature range) specified in the applicable designation, each method is acceptable for use in state or local air quality surveillance systems under 40 CFR Part 58 unless the applicable designation is subsequently canceled. Automated methods for pollutants other than PM<sub>10</sub> are acceptable for use only at shelter temperatures between 20°C and 30°C and line voltages between 105 and 125 volts unless wider limits are specified in the method description.

Prospective users of the methods listed should note (1) that each method must be used in strict accordance with its associated operation or instruction manual and with applicable quality assurance procedures, and (2) that modification of a method by its vendor or user may cause the pertinent designation to be inapplicable to the method as modified. (See Section 2.8 of Appendix C, 40 CFR Part 58 for approval of modifications to any of these methods by users.)

Further information concerning particular designations may be found in the *Federal Register* notice cited for each method or by writing to the National Exposure Research Laboratory, Human Exposure and Atmospheric Sciences Division (MD-46), U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711. Technical information concerning the methods should be obtained by contacting the source listed for each method. Source addresses are listed at the end of the listing of methods, except for the addresses for lead method sources, which are given with the method. New analyzers or PM<sub>10</sub> samplers sold as reference or equivalent methods must carry a label or sticker identifying them as designated methods. For analyzers or PM<sub>10</sub> samplers sold prior to the designation of a method with the same or similar model number, the model number does not necessarily identify an analyzer or sampler as a designated method. Consult the manufacturer or seller to determine if a previously sold analyzer or sampler can be considered a designated method or if it can be upgraded to designation status. Analyzer users who experience operational or other difficulties with a designated analyzer or sampler and are unable to resolve the problem directly with the instrument manufacturer may contact EPA (preferably in writing) at the above address for assistance.

This list will be revised as necessary to reflect any new designations or any cancellation of a designation currently in effect. The most current revision of the list will be available for inspection at EPA's Regional Offices, and copies may be obtained at the Internet site identified above or by writing to the National Exposure Research Laboratory at the address specified above.

### **Most Recent Designations**

|   |                |
|---|----------------|
| Teledyne Advanced Pollution Instrumentation Model 300E CO Analyzer        | Nov. 21, 2001  |
| Tisch Environmental Model TE-6070 PM <sub>10</sub> High Volume Sampler    | April 02, 2002 |
| BGI Models PQ200-VSCC and PQ200A-VSCC PM <sub>2.5</sub> Sampler           | April 02, 2002 |
| R & P Partisol®-FRM Model 2000 PM-2.5 FEM PM <sub>2.5</sub> Sampler       | April 02, 2002 |
| R & P Partisol® Model 2000 PM-2.5 FEM PM <sub>2.5</sub> Audit Sampler     | April 02, 2002 |
| R & P Partisol®-Plus Model 2025 PM-2.5 FEM PM <sub>2.5</sub> Seq. Sampler | April 02, 2002 |
| Environnement S.A Model AC32M Nitrogen Oxides Analyzer                    | April 02, 2002 |

**PARTICULATE MATTER - TSP****Reference Method for TSP***Manual Reference Method: 40 CFR Part 50, Appendix B*

Reference Method for the Determination of Suspended Particulate Matter in the Atmosphere (High-Volume Method)

[Federal Register: Vol 47, page 54912, 12/06/82 and Vol 48, page 17355, 04/22/83]

**PARTICULATE MATTER - PM<sub>10</sub>****Andersen Model RAAS10-100 PM<sub>10</sub> Single Channel PM<sub>10</sub> Sampler***Manual Reference Method: RFPS-0699-130*

"Andersen Instruments, Incorporated Model RAAS10-100 Single Channel Reference Method PM<sub>10</sub> Sampler," with RAAS-10 PM<sub>10</sub> inlet or the louvered inlet specified in 40 CFR 50 Appendix L, Figs. L-2 thru L-19, configured as a PM<sub>10</sub> reference method, and operated for 24-hour continuous sample periods at a flow rate of 16.67 liters/ minute, and in accordance with the Model RAAS105-100 Operator's Manual and with the requirements and sample collection filters specified in 40 CFR Part 50, Appendix J or Appendix M.

[Federal Register: Vol 64, page 33481, 06/23/99]

**Andersen Model RAAS10-200 PM<sub>10</sub> Single Channel PM<sub>10</sub> Audit Sampler***Manual Reference Method: RFPS-0699-131*

"Andersen Instruments, Incorporated Model RAAS10-200 Single Channel Reference Method PM<sub>10</sub> Audit Sampler," with RAAS-10 PM<sub>10</sub> inlet or the louvered inlet specified in 40 CFR 50 Appendix L, Figs. L-2 thru L-19, configured as a PM<sub>10</sub> reference method, and operated for 24-hour continuous sample periods at a flow rate of 16.67 liters/minute, and in accordance with the Model RAAS105-200 Operator's Manual and with the requirements and sample collection filters specified in 40 CFR Part 50, Appendix J or Appendix M.

[Federal Register: Vol 64, page 33481, 06/23/99]

**Andersen Model RAAS10-300 PM<sub>10</sub> Multi Channel PM<sub>10</sub> Sampler***Manual Reference Method: RFPS-0699-132*

"Andersen Instruments, Incorporated Model RAAS10-300 Multi Channel Sequential Reference Method PM<sub>10</sub> Sampler," with RAAS-10 PM<sub>10</sub> inlet or the louvered inlet specified in 40 CFR 50 Appendix L, Figs. L-2 thru L-19, configured as a PM<sub>10</sub> reference method, and operated for 24-hour continuous sample periods at a flow rate of 16.67 liters/ minute, and in accordance with the Model RAAS105-300 Operator's Manual and with the requirements and sample collection filters specified in 40 CFR Part 50, Appendix J or Appendix M.

[Federal Register: Vol 64, page 33481, 06/23/99]

**BGI Incorporated Model PQ100 Air Sampler***Manual Reference Method: RFPS-1298-124*

"BGI Incorporated Model PQ100 Air Sampler" with BGI 16.7 Inlet Kit or the louvered inlet specified in 40 CFR 50 Appendix L, Figs. L-2 thru L-19, configured as a PM<sub>10</sub> reference method, for 24-hour continuous sample periods at a flow rate of 16.7 liters/minute, operated in accordance with the Model PQ100 Instruction Manual and with the requirements specified in 40 CFR Part 50, Appendix J or Appendix M, using either the original or the newer PQ200-type filter cassettes, and with or without the optional Solar Panel Power Supply.

[Federal Register: Vol 63, page 69625, 12/17/98]

**BGI Incorporated Model PQ200 Air Sampler***Manual Reference Method: RFPS-1298-125*

"BGI Incorporated Model PQ200 Air Sampler" with "flat plate" PM<sub>10</sub> inlet or the louvered inlet specified in 40 CFR 50 Appendix L, Figs. L-2 thru L-19, configured as a PM<sub>10</sub> reference method, and operated for 24-hour continuous sample periods in accordance with the Model PQ200 Instruction Manual and with the requirements specified in 40 CFR Part 50, Appendix J or Appendix M, and with or without the optional Solar Panel Power Supply.

[Federal Register: Vol 63, page 69625, 12/17/98]

**Graseby Andersen/GMW Model 1200 High-Volume Air Sampler***Manual Reference Method: RFPS-1287-063*

Sierra-Andersen or General Metal Works Model 1200 PM<sub>10</sub> High-Volume Air Sampler System," consisting of a Sierra-Andersen or General Metal Works Model 1200 PM<sub>10</sub> Size-Selective Inlet and any of the high-volume air samplers identified as SAUV-10H, SAUV-11H, GMW-IP-10, GMW-IP-10-70, GMW-IP-10-801, or GMW-IP-10-8000, which include the following components: Anodized aluminum high-volume shelter with either acrylonitrile butadiene styrene plastic filter holder and motor/blower housing or stainless steel filter holder and phenolic plastic motor/blower housing; 0.6 hp motor/blower; pressure transducer flow recorder; either an electronic mass flow controller or a volumetric flow controller; either a digital timer/programmer, seven-day mechanical timer, six-day timer/programmer, or solid-state timer/programmer; elapsed time indicator; and filter cartridge.

[Federal Register: Vol 52, page 45684, 12/01/87 and Vol 53, page 1062, 01/15/88]

**Graseby Andersen/GMW Model 321-B High-Volume Air Sampler***Manual Reference Method: RFPS-1287-064*

"Sierra-Andersen or General Metal Works Model 321-B PM<sub>10</sub> High-Volume Air Sampler System," consisting of a Sierra-Andersen or General Metal Works Model 321-B PM<sub>10</sub> Size-Selective Inlet and any of the high-volume air samplers identified as SAUV-10H, SAUV-11H, GMW-IP-10, GMW-IP-10-70, GMW-IP-10-801, or GMW-IP-10-8000, which include the following components: Anodized aluminum high-volume shelter with either acrylonitrile butadiene styrene plastic filter holder and motor/blower housing or stainless steel filter holder and phenolic plastic motor/blower housing; 0.6 hp motor/blower; pressure transducer flow recorder; either an electronic mass flow controller or a volumetric flow controller; either a digital timer/programmer, seven-day mechanical timer, six-day timer/programmer, or solid-state timer/programmer; elapsed time indicator; and filter cartridge.

[Federal Register: Vol 52, page 45684, 12/01/87 and Vol 53, page 1062, 01/15/88]

**Graseby Andersen/GMW Model 321-C High-Volume Air Sampler***Manual Reference Method: RFPS-1287-065*

"Sierra-Andersen or General Metal Works Model 321-C PM<sub>10</sub> High-Volume Air Sampler System," consisting of a Sierra-Andersen General Metal Works Model 321-C PM<sub>10</sub> or Size-Selective Inlet and any of the high-volume air samplers identified as SAUV-10H, SAUV-11H, GMW-IP-10, GMW-IP-10-70, GMW-IP-10-801, or GMW-IP-10-8000, which include the following components: Anodized aluminum high-volume shelter with either acrylonitrile butadiene styrene plastic filter holder and motor/blower housing or stainless steel filter holder and phenolic plastic motor/blower housing; 0.6 hp motor/blower; pressure transducer flow recorder; either an electronic mass flow controller or a volumetric flow controller; either a digital timer/programmer, seven-day mechanical timer, six-day timer/programmer, or solid-state timer/programmer; elapsed time indicator; and filter cartridge.

[Federal Register: Vol 52, page 45684, 12/01/87 and Vol 53, page 1062, 01/15/88]

**Graseby Andersen/GMW Models SA241 and SA241M Dichotomous Sampler***Manual Reference Method: RFPS-0789-073*

"Sierra-Andersen Models SA241 and SA241M or General Metal Works Models G241 and G241M PM<sub>10</sub> Dichotomous Samplers," consisting of the following components: Sampling Module with SA246b or G246b 10 µm inlet or the louvered inlet specified in 40 CFR 50 Appendix L, Figs. L-2 thru L-19, 2.5 µm virtual impactor assembly, 37 mm coarse and fine particulate filter holders, and tripod mount; Control Module with diaphragm vacuum pump, pneumatic constant flow controller, total and coarse flow rotameters and vacuum gauges, pressure switch (optional), 24-hour flow/event recorder, digital timer/programmer or 7-day skip timer, and elapsed time indicator.

[Federal Register: Vol 54, page 31247, 07/27/89]

**Graseby Andersen/GMW Model FH621-N Beta Monitor***Automated Equivalent Method: EQPM-0990-076*

"Andersen Instruments Model FH621-N PM<sub>10</sub> Beta Attenuation Monitor," consisting of the following components: FH101 Vacuum Pump Assembly; FH102 Accessory Kit; FH107 Roof Flange Kit; FH125 Zero and Span PM<sub>10</sub> Mass Foil Calibration Kit; FH621 Beta Attenuation 19-inch Control Module; SA246b PM<sub>10</sub> Inlet (16.7 liter/min) or the louvered inlet specified in 40 CFR 50 Appendix L, Figs. L-2 thru L-19; operated for 24-hour average measurements, with an observing time of 60 minutes, the calibration factor set to 2400, a glass fiber filter tape, an automatic filter advance after each 24-hour sample period, and with or without either of the following options: FH0P1 Indoor Cabinet; FH0P2 Outdoor Shelter Assembly.

[Federal Register: Vol 55, page 38387, 09/18/90]

**Met One or Sibata Models BAM/GBAM 1020, BAM/GBAM 1020-1***Automated Equivalent Method: EQPM-0798-122*

"Met One Instruments or Sibata Scientific Technology Models BAM 1020, GBAM 1020, BAM 1020-1, and GBAM 1020-1 PM<sub>10</sub> Beta Attenuation Monitor," including the BX-802 sampling inlet, operated for 24-hour average measurements, with a filter change frequency of one hour, with glass fiber filter tape, and with or without any of the following options: BX-823, tube extension; BX-825, heater kit; BX-826, 230 Vac heater kit; BX-828, roof tripod; BX-902, exterior enclosure; BX-903, exterior enclosure with temperature control; BX-961, mass flow controller; BX-967, internal calibration device.

[Federal Register: Vol 63, page 41253, 08/03/98]

**Oregon DEQ Medium Volume PM<sub>10</sub> Sampler***Manual Reference Method: RFPS-0389-071*

"Oregon DEQ Medium Volume PM<sub>10</sub> Sampler." NOTE: This method is not now commercially available.

[Federal Register: Vol 54, page 12273, 03/24/89]

**Rupprecht & Patashnick TEOM Series 1400/1400a PM<sub>10</sub> Monitors***Automated Equivalent Method: EQPM-1090-079*

"Rupprecht & Patashnick TEOM Series 1400 and Series 1400a PM-10 Monitors" (including serial number prefixes 1400, 140A, 140AA, 140AB, 140AT, and 140UP), consisting of the following components: TEOM Sensor Unit; TEOM Control Unit; Flow Splitter (3 liter/min sample flow); Teflon-Coated Glass Fiber Filter Cartridges; Rupprecht & Patashnick PM-10 Inlet (part number 57-00596), Sierra-Andersen Model 246b PM-10 Inlet (16.7 liter/min) or louvered inlet specified in 40 CFR 50 Appendix L, Figs. L-2 thru L-19; operated for 24-hour average measurements, with the total mass averaging time set at 300 seconds, the mass rate/mass concentration averaging time set at 300 seconds, the gate time set at 2 seconds, and with or without any of the following options: Tripod; Outdoor Enclosure; Automatic Cartridge Collection Unit (Series 1400a only); Flow Splitter Adapter (for 1 or 2 liter/min sample flow).

[Federal Register: Vol 55, page 43406, 10/29/90]

**Rupprecht & Patashnick Partisol Model 2000 Air Sampler***Manual Reference Method: RFPS-0694-098*

"Rupprecht & Patashnick Partisol Model 2000 Air Sampler," consisting of a Hub Unit and 0, 1, 2, or 3 Satellite Units, with each sampling station used for PM<sub>10</sub> measurements equipped with a Rupprecht & Patashnick PM-10 inlet and operated for continuous 24-hour periods using the Basic, Manual, Time, Analog Input, or Serial Input programming modes, and with or without any of the following options: PM<sub>2.5</sub>-style filter cassette holder; louvered inlet specified in 40 CFR 50 Appendix L, Figs. L-2 thru L-19 in lieu of standard inlet; 57-002320 Stand for Hub or Satellite; 59-002542 Advanced EPROM; 10-001403 Large Pump (1/4 hp); 120 VAC. Hardware for Indoor Installation consists of: 51-002638-xxxx Temperature Sensor (Extended Length); 55-001289 Roof Flange (1 1/4"); 57-000604 Support Tripod for Inlet; 57-002526-0001 Sample Tube Extension (1 m); 57-002526-0002 Sample Tube Extension (2 m). Hardware for Outdoor Installation in Extreme Cold Environments consists of: 10-002645 Insulating Jacket for Hub Unit.

*[Federal Register: Vol 59, page 35338, 07/11/94]***Rupprecht and Patashnick Co. Partisol®-FRM Model 2000 PM<sub>10</sub> Air Sampler***Manual Reference Method: RFPS-1298-126*

"Rupprecht and Patashnick Company Partisol®-FRM Model 2000 PM<sub>10</sub> Air Sampler" with PM<sub>10</sub> inlet or louvered inlet specified in 40 CFR 50 Appendix L, Figs. L-2 thru L-19, configured as a PM<sub>10</sub> reference method, and operated for 24-hour continuous sample periods in accordance with the Model 2000 Instruction Manual and with the requirements specified in 40 CFR Part 50, Appendix J or Appendix M.

*[Federal Register: Vol 63, page 69625, 12/17/98]***Rupprecht and Patashnick Partisol®-Plus Model 2025 PM<sub>10</sub> Seq. Air Sampler***Manual Reference Method: RFPS-1298-127*

"Rupprecht and Patashnick Company Partisol®-Plus Model 2025 PM<sub>10</sub> Sequential Air Sampler" with PM<sub>10</sub> inlet or louvered inlet specified in 40 CFR 50 Appendix L, Figs. L-2 thru L-19, configured as a PM<sub>10</sub> reference method, and operated for 24-hour continuous sample periods in accordance with the Model 2025 Instruction Manual and with the requirements specified in 40 CFR Part 50, Appendix J or Appendix M.

*[Federal Register: Vol 63, page 69625, 12/17/98]***Tisch Environmental Model TE-6070 PM<sub>10</sub> High-Volume Air Sampler***Manual Reference Method: RFPS-0202-141*

"Tisch Environmental Model TE-6070 PM<sub>10</sub> High-Volume Air Sampler," consisting of a TE-6001 PM<sub>10</sub> size-selective inlet, 8" x 10" filter holder, aluminum outdoor shelter, mass flow controller or volumetric flow controller with brush or brushless motor, 7-day mechanical off/on-elapsed timer or 11-day digital off/on-elapsed timer, and any of the high volume sampler variants identified as TE-6070, TE-6070-BL, TE-6070D, TE-6070D-BL, TE-6070V, TE-6070V-BL, TE-6070-DV, or TE-6070DV-BL, with or without the optional stainless steel filter media holder/filter cartridge or continuous flow/pressure recorder.

*[Federal Register: Vol 67, page 15566, 04/02/02]***Wedding & Associates' or Thermo Environmental Instruments Inc.***Manual Reference Method: RFPS-1087-062***Model 600 PM<sub>10</sub> High-Volume Sampler**

"Wedding & Associates' or Thermo Environmental Instruments, Inc. Model 600 PM<sub>10</sub> Critical Flow High-Volume Sampler," consisting of the following W&A/TEII components: PM<sub>10</sub> Inlet; Critical Flow Device; Anodized Aluminum Shelter; Blower Motor Assembly for 115, 220 or 240 VAC and 50/60 Hz; Mechanical Timer; Elapsed Time Indicator; and Filter Cartridge/Cassette, and with or without the following options: Digital Timer, 6 or 7 Day Timer, and 1 or 7 Day Pressure Recorder.

*[Federal Register: Vol 52, page 37366, 10/06/87]***Wedding & Associates' or Thermo Environmental Instruments Inc.***Automated Equivalent Method: EQPM-0391-081***Model 650 PM<sub>10</sub> Beta Gauge**

"Wedding & Associates' or Thermo Environmental Instruments, Inc. Model 650 PM<sub>10</sub> Beta Gauge Automated Particle Sampler," consisting of the following W&A/TEII components: Particle Sampling Module, PM<sub>10</sub> Inlet (18.9 liter/min), Inlet Tube and Support Ring, Vacuum Pump (115, 220 or 240 VAC and 50/60 Hz); and operated for 24-hour average measurements with glass fiber filter tape.

*[Federal Register: Vol 56, page 9216, 03/05/91]***PARTICULATE MATTER - PM<sub>2.5</sub>****Andersen Model RAAS2.5-200 PM<sub>2.5</sub> Ambient Audit Air Sampler***Manual Reference Method: RFPS-0299-128*

"Andersen Instruments, Incorporated Model RAAS2.5-200 PM<sub>2.5</sub> Audit Sampler," configured as a PM<sub>2.5</sub> reference method and operated with software (firmware) version 4B or 5.0.1 - 6.09 for 24-hour continuous sample periods at a flow rate of 16.67 liters/minute, and in accordance with the Model RAAS2.5-200 Operator's Manual and with the requirements and sample collection filters specified in 40 CFR Part 50, Appendix L.

*[Federal Register: Vol 64, page 12167, 03/11/99]*

**BGI Inc. Models PQ200 or PQ200A PM<sub>2.5</sub> Ambient Fine Particle Sampler***Manual Reference Method: RFPS-0498-116*

"BGI Incorporated Models PQ200 and PQ200A PM<sub>2.5</sub> Ambient Fine Particle Sampler," operated with firmware version 3.88 or 3.89R, for 24-hour continuous sample periods, in accordance with the Model PQ200/PQ200A Instruction Manual and with the requirements and sample collection filters specified in 40 CFR Part 50, Appendix L, and with or without the optional Solar Power Supply or the optional dual-filter cassette (P/N F-21/6) and associated lower impactor housing (P/N B2027), where the upper filter is used for PM<sub>2.5</sub>. The Model PQ200A is described as a portable audit sampler and includes a set of three carrying cases.

*[Federal Register: Vol 63, page 18911, 04/16/98]***BGI Inc. Models PQ200-VSCC or PQ200A-VSCC PM<sub>2.5</sub> Sampler***Manual Equivalent Method: EQPM-0202-142*

"BGI Incorporated Models PQ200-VSCC or PQ200A-VSCC PM<sub>2.5</sub> Ambient Fine Particle Sampler," configured with a BGI VSCC™ Very Sharp Cut Cyclone particle size separator (in lieu of a WINS impactor) and operated with firmware version 3.88, 3.91, 3.89R, or 3.91R, for 24-hour continuous sample periods, in accordance with the Model PQ200/PQ200A Instruction Manual and VSCC supplemental manual and with the requirements and sample collection filters specified in 40 CFR Part 50, Appendix L, and with or without the optional Solar Power Supply or the optional dual-filter cassette (P/N F-21/6) and associated lower impactor housing (P/N B2027), where the upper filter is used for PM<sub>2.5</sub>. The Model PQ200A VSCC is described as a portable audit sampler and includes a set of three carrying cases.

*[Federal Register: Vol 67, page 15567, 04/02/02]***Graseby Andersen Model RAAS2.5-100 PM<sub>2.5</sub> Ambient Air Sampler***Manual Reference Method: RFPS-0598-119*

"Graseby Andersen Model RAAS2.5-100 PM<sub>2.5</sub> Ambient Air Sampler," operated with software version 4B or 5.0.1 - 6.09 configured for "Single 2.5" operation, for 24-hour continuous sample periods at a flow rate of 16.67 liters/minute, and in accordance with the Model RAAS2.5-100 Operator's Manual and with the requirements and sample collection filters specified in 40 CFR Part 50, Appendix L.

*[Federal Register: Vol 63, page 31991, 06/11/98]***Graseby Andersen Model RAAS2.5-300 PM<sub>2.5</sub> Sequential Ambient Air Sampler***Manual Reference Method: RFPS-0598-120*

"Graseby Andersen Model RAAS2.5-300 PM<sub>2.5</sub> Sequential Ambient Air Sampler," operated with software version 4B or 5.0.1 - 6.09 configured for "Multi 2.5" operation, for 24-hour continuous sample periods at a flow rate of 16.67 liters/minute, and in accordance with the Model RAAS2.5-300 Operator's Manual and with the requirements and sample collection filters specified in 40 CFR Part 50, Appendix L.

*[Federal Register: Vol 63, page 31991, 06/11/98]***Rupprecht & Patashnick Partisol®-FRM Model 2000 PM-2.5 Air Sampler***Manual Reference Method: RFPS-0498-117*

"Rupprecht & Patashnick Company, Incorporated Partisol®-FRM Model 2000 PM-2.5 Air Sampler," operated with software versions 1.102 - 1.202, with either R&P-specified machined or molded filter cassettes, with or without the optional insulating jacket for cold weather operation, for 24-hour continuous sample periods, in accordance with the Model 2000 Instruction Manual and with the requirements and sample collection filters specified in 40 CFR Part 50, Appendix L.

*[Federal Register: Vol 63, page 18911, 04/16/98]***Rupprecht & Patashnick Partisol®-FRM Model 2000 PM-2.5 FEM Air Sampler***Manual Equivalent Method: EQPM-0202-143*

"Rupprecht & Patashnick Co., Inc. Partisol®-FRM Model 2000 PM-2.5 FEM Air Sampler," configured with a BGI VSCC™ Very Sharp Cut Cyclone particle size separator (in lieu of a WINS impactor) and operated with software versions 1.102 - 1.202, with either R&P-specified machined or molded filter cassettes, for 24-hour continuous sample periods, in accordance with the Model 2000 Instruction Manual and VSCC supplemental manual, with the requirements and sample collection filters specified in 40 CFR Part 50, Appendix L, and with or without the optional insulating jacket for cold weather operation.

*[Federal Register: Vol 67, page 15567, 04/02/02]***Rupprecht & Patashnick Partisol® Model 2000 PM-2.5 Audit Sampler***Manual Reference Method: RFPS-0499-129*

"Rupprecht & Patashnick Company, Inc. Partisol® Model 2000 PM-2.5 Audit Sampler," configured as a PM<sub>2.5</sub> reference method and operated with software (firmware) version 1.2 - 1.202, for 24-hour continuous sample periods at a flow rate of 16.67 liters/minute, in accordance with the Partisol® Model 2000 Operating Manual and with the requirements and sample collection filters specified in 40 CFR Part 50, Appendix L.

*[Federal Register: Vol 64, page 19153, 04/19/99]***Rupprecht & Patashnick Partisol® Model 2000 PM-2.5 FEM Audit Sampler***Manual Equivalent Method: EQPM-0202-144*

"Rupprecht & Patashnick Co., Inc. Partisol® Model 2000 PM-2.5 FEM Audit Sampler," configured with a BGI VSCC™ Very Sharp Cut Cyclone particle size separator (in lieu of a WINS impactor), and operated with software (firmware) version 1.2 - 1.202, for 24-hour continuous sample periods at a flow rate of 16.67 liters/minute, in accordance with the Partisol® Model 2000 Operating Manual and VSCC supplemental manual and with the requirements and sample collection filters specified in 40 CFR Part 50, Appendix L.

*[Federal Register: Vol 67, page 15567, 04/02/02]*

**Rupprecht & Patashnick Partisol®-Plus Model 2025 Sequential Air Sampler***Manual Reference Method: RFPS-0498-118*

"Rupprecht & Patashnick Company, Incorporated Partisol®-Plus Model 2025 PM-2.5 Sequential Air Sampler," operated with any software version 1.003 through 1.413, with either R&P-specified machined or molded filter cassettes, for 24-hour continuous sample periods, in accordance with the Model 2025 Instruction Manual and with the requirements and sample collection filters specified in 40 CFR Part 50, Appendix L.

[Federal Register: Vol 63, page 18911, 04/16/98]

**Rupprecht & Patashnick Partisol®-Plus Model 2025 FEM Sequential Sampler***Manual Equivalent Method: EQPM-0202-145*

"Rupprecht & Patashnick Co., Inc. Partisol®-Plus Model 2025 PM-2.5 FEM Sequential Air Sampler," configured with a BGI VSCC™ Very Sharp Cut Cyclone particle size separator (in lieu of a WINS impactor), and operated with any software version 1.003 through 1.413, with either R&P-specified machined or molded filter cassettes, for 24-hour continuous sample periods, in accordance with the Model 2025 Instruction Manual and VSCC supplemental manual and with the requirements and sample collection filters specified in 40 CFR Part 50, Appendix L.

[Federal Register: Vol 67, page 15567, 04/02/02]

**Thermo Environmental Instruments, Incorporated Model 605 "CAPS" Sampler***Manual Reference Method: RFPS-1098-123*

"Thermo Environmental Instruments, Incorporated Model 605 "CAPS" Computer Assisted Particle Sampler," configured as a PM<sub>2.5</sub> reference method and operated with software version 1.02A, for 24-hour continuous sample periods, in accordance with the Model 605 Instruction Manual and with the requirements and sample collection filters specified in 40 CFR Part 50, Appendix L.

[Federal Register: Vol 63, page 58036, 10/29/98]

**URG-MASS100 Single PM 2.5 FRM Sampler***Manual Reference Method: RFPS-0400-135*

"URG-MASS100 Single PM 2.5 FRM Sampler," operated with software (firmware) version 4B or 5.0.1, configured for "Single 2.5" operation, for 24-hour continuous sample periods at a flow rate of 16.67 liters/minute, and in accordance with the URG-MASS100 Operator's Manual and with the requirements and sample collection filters specified in 40 CFR Part 50, Appendix L.

[Federal Register: Vol 65, page 26603, 05/08/00]

**URG-MASS300 Sequential PM 2.5 FRM Sampler***Manual Reference Method: RFPS-0400-136*

"URG-MASS300 Sequential PM 2.5 FRM Sampler," operated with software (firmware) version 4B or 5.0.1, configured for "Multi 2.5" operation, for 24-hour continuous sample periods at a flow rate of 16.67 liters/minute, and in accordance with the URG-MASS300 Operator's Manual and with the requirements and sample collection filters specified in 40 CFR Part 50, Appendix L.

[Federal Register: Vol 65, page 26603, 05/08/00]

**NOTES**

<sup>1</sup> Users should be aware that designation of this analyzer for operation on ranges less than the range specified in the performance specifications for this analyzer (40 CFR 53, Subpart B) is based on meeting the same absolute performance specifications required for the specified range. Thus, designation of these lower ranges does not imply commensurably better performance than that obtained on the specified range.

<sup>2</sup> This analyzer is approved for use, with proper factory configuration, on either 50 or 60 Hertz line frequency and nominal power line voltages of 115 Vac and 230 Vac.

## Sources or Contacts for Designated Reference and Equivalent Methods

ABB Process Analytics  
P.O. Box 831  
Lewisburg, WV 24901  
(304) 647-4358

(Teledyne) Advanced Pollution  
Instrumentation, Inc.  
6565 Nancy Ridge Drive  
San Diego, CA 92121-2251  
(619) 657-9800  
[www.advpoll.com](http://www.advpoll.com)

Andersen Instruments  
500 Technology Court  
Smyrna, GA 30082-9211  
(800) 241-6898  
[www.anderseninstruments.com](http://www.anderseninstruments.com)

ASARCO Incorporated  
3422 South 700 West  
Salt Lake City, UT 84119  
(801) 262-2459

Beckman Instruments, Inc.  
Process Instruments Division  
2500 Harbor Blvd.  
Fullerton, CA 92634  
(714) 871-4848

Bendix  
[Refer to ABB Process Analytics]

BGI Incorporated  
58 Guinan Street  
Waltham, MA 02451  
(781) 891-9380  
[www.bgiusa.com](http://www.bgiusa.com) (bgiinc@attglobal.net)

Columbia Scientific Industries  
11950 Jollyville Road  
Austin, TX 78759  
(800) 531-5003

Combustion Engineering  
[Refer to ABB Process Analytics]

Dasibi Environmental Corp.  
506 Paula Avenue  
Glendale, CA 91201  
(818) 247-7601  
[www.dasibi.com](http://www.dasibi.com)

DKK-TOA Corporation  
29-10, 1-Chome, Takadanobaba,

Shinjuku-ku  
Tokyo 169-8648, Japan  
[www.toadkk.co.jp](http://www.toadkk.co.jp)

Environnement S.A.  
111, bd Robespierre  
78300 Poissy, France  
[www.environnement-sa.com](http://www.environnement-sa.com)  
Instruments also available from:  
Altech/Environnement U.S.A.  
2623 Kaneville Court  
Geneva, IL 60134  
(630) 262-4400  
rbrown@altechusa.com

EnviroNics, Inc.  
69 Industrial Park Rd. E.  
Tolland, CT 06084-2805  
(203) 429-0077  
[www.environics.com](http://www.environics.com)

Graseby GMW  
[Refer to Andersen Instruments]

Horiba Instruments Incorporated  
17671 Armstrong Avenue  
Irvine, CA 92714  
(800) 446-7422  
[www.horiba.com](http://www.horiba.com)

Lear Siegler  
[Refer to Monitor Labs, Inc.]

Commonwealth of Massachusetts  
Department of Environmental  
Quality Engineering  
Tewksbury, MA 01876

Met One Instruments, Inc.  
1600 Washington Blvd.  
Grants Pass, OR 97526  
(541) 471-7111  
[www.metone.com](http://www.metone.com) (metone@metone.com)

McMillan  
[Refer to Columbia Scientific Industries]

Mine Safety Appliances  
600 Penn Center Blvd.  
Pittsburgh, PA 15235-5810  
(412) 273-5101

Monitor Labs, Inc.  
74 Inverness Drive  
Englewood, CO 80112-5189  
(800) 422-1499  
[www.monitorlabs.com](http://www.monitorlabs.com)

Opsis AB, Furulund, Sweden  
Instruments also available from:  
Opsis, Inc.  
146-148 Sound Beach Avenue  
Old Greenwich, CT 06870  
(203) 698-1810  
[www.opsis.se](http://www.opsis.se)

State of Oregon  
Department of Environmental Quality  
Air Quality Division  
811 S.W. Sixth Avenue  
Portland, OR 97204

PCI Ozone Corp.  
One Fairfield Crescent  
West Caldwell, NJ 07006  
(201) 575-7052  
[www.pci-wedeco.com](http://www.pci-wedeco.com)

Phillips Electronic Instruments, Inc.  
85 McKee Drive  
Mahwah, NJ 07430

Rupprecht & Patashnick Co., Inc.  
25 Corporate Circle  
Albany, NY 12203  
(518) 452-0065  
[www.rpco.com](http://www.rpco.com)

Sibata Scientific Technology, Ltd.  
1-25, 3-chome  
Ikenohata, Taito-ku  
Tokyo 110, Japan  
81-3(3822)2272  
TTani@email.msn.com

Teledyne Analytical Instruments  
16830 Chestnut Street  
City of Industry, CA 91748  
(626) 934-1622

Thermo Environmental Instruments, Inc.  
8 West Forge Parkway  
Franklin, MA 02038  
(508) 520-0430  
[www.thermoei.com](http://www.thermoei.com)

Tisch Environmental, Inc.  
145 S. Miami Avenue  
Village of Cleves, OH 45002  
(513) 467-9000  
[www.tisch-env.com](http://www.tisch-env.com)

URG Corporation  
116 Merritt Mill Road  
Chapel Hill, NC 27516  
(919) 942-2753

U.S. EPA  
National Exposure Research Laboratory  
Human Exposure & Atmospheric  
Sciences Division (MD-46)  
Research Triangle Park, NC 27711  
(919) 541- 2622  
[www.epa.gov/head](http://www.epa.gov/head)

Wedding and Associates, Inc.  
[Refer to Thermo Environmental  
Instruments, Inc.]



# U.S. EPA REFERENCE & EQUIVALENT METHODS FOR AMBIENT AIR

April 03, 2002

| <u>Method</u>                               | <u>Designation<br/>Number</u> | <u>Method<br/>Code</u> | <u>Method</u>                                  | <u>Designation<br/>Number</u> | <u>Method<br/>Code</u> |
|---|-------------------------------|------------------------|--|-------------------------------|------------------------|
| <b><u>SO<sub>2</sub> Manual Methods</u></b> |                               |                        | Lear Siegler or Monitor Labs ML9830,           |                               |                        |
| Reference method (pararosaniline)           | --                            | 097                    | Monitor Labs ML9830B, Wedding 1020             | RFCA-0992-088                 | 088                    |
| Technicon I (pararosaniline)                | EQS-0775-001                  | 097                    | MASS - CO 1 (Massachusetts)                    | RFCA-1280-050                 | 050                    |
| Technicon II (pararosaniline)               | EQS-0775-002                  | 097                    | Monitor Labs 8310                              | RFCA-0979-041                 | 041                    |
|   |                               |                        | Monitor Labs or Lear Siegler 8830              | RFCA-0388-066                 | 066                    |
|   |                               |                        | MSA 202S                                       | RFCA-0177-018                 | 018                    |
| <b><u>SO<sub>2</sub> Analyzers</u></b>      |                               |                        | Teledyne Advanced Pollution Instr. 300 or 300E |                               |                        |
| Advanced Pollution Instr. 100               | EQSA-0990-077                 | 077                    | RFCA-1093-093                                  | 093                           |                        |
| Advanced Pollution Instr. 100A or           |                               |                        | Thermo Electron or Thermo                      |                               |                        |
| Teledyne Analytical Instruments 6400A       | EQSA-0495-100                 | 100                    | Environmental Instruments 48, 48C              | RFCA-0981-054                 | 054                    |
| Asarco 500                                  | EQSA-0877-024                 | 024                    |  |                               |                        |
| Beckman 953                                 | EQSA-0678-029                 | 029                    | <b><u>NO<sub>x</sub> Manual Methods</u></b>    |                               |                        |
| Bendix 8303                                 | EQSA-1078-030                 | 030                    | Sodium arsenite (orifice)                      | EQN-1277-026                  | 084                    |
| Columbia Scientific Industries 5700         | EQSA-0494-095                 | 095                    | Sodium arsenite/Technicon II                   | EQN-1277-027                  | 084                    |
| Dasibi 4108                                 | EQSA-1086-061                 | 061                    | TGS-ANSA (orifice)                             | EQN-1277-028                  | 098                    |
| DKK-TOA Corp. Model GFS-32                  | EQSA-0701-115                 | 115                    |  |                               |                        |
| DKK-TOA Corp. Model GFS-112E                | EQSA-0100-133                 | 133                    | <b><u>NO<sub>x</sub> Analyzers</u></b>         |                               |                        |
| Environnement S.A. AF21M                    | EQSA-0292-084                 | 084                    | Advanced Pollution Instr. 200                  | RFNA-0691-082                 | 082                    |
| Environnement S.A. SANOA                    | EQSA-0400-138                 | 138                    | Advanced Pollution Instr. 200A or              |                               |                        |
| Horiba Model APSA-360/APSA-360ACE           | EQSA-0197-114                 | 114                    | Teledyne Analytical Instruments 9110A          | RFNA-1194-099                 | 099                    |
| Lear Siegler AM2020                         | EQSA-1280-049                 | 049                    | Beckman 952A                                   | RFNA-0179-034                 | 034                    |
| Lear Siegler SM1000                         | EQSA-1275-005                 | 005                    | Bendix 8101-B                                  | RFNA-0479-038                 | 038                    |
| Lear Siegler or Monitor Labs ML9850,        |                               |                        | Bendix 8101-C                                  | RFNA-0777-022                 | 022                    |
| Monitor Labs ML9850B, Wedding 1040          | EQSA-0193-092                 | 092                    | Columbia Scientific Indust.1600, 5600          | RFNA-0977-025                 | 025                    |
| Meloy SA185-2A                              | EQSA-1275-006                 | 006                    | Dasibi 2108                                    | RFNA-1192-089                 | 089                    |
| Meloy SA285E                                | EQSA-1078-032                 | 032                    | DKK-TOA Corp GLN-114E                          | RFNA-0798-121                 | 121                    |
| Meloy SA700                                 | EQSA-0580-046                 | 046                    | Environnement S.A. AC31M                       | RFNA-0795-104                 | 104                    |
| Monitor Labs 8450                           | EQSA-0876-013                 | 513                    | Environnement S.A. AC32M                       | RFNA-0202-146                 | 146                    |
| Monitor Labs or Lear Siegler 8850           | EQSA-0779-039                 | 039                    | Environnement S.A. SANOA                       | EQNA-0400-139                 | 139                    |
| Monitor Labs or Lear Siegler 8850S          | EQSA-0390-075                 | 075                    | Horiba APNA-360                                | RFNA-0196-111                 | 111                    |
| Opsis AR 500, System 300 (open path)        | EQSA-0495-101                 | 101                    | Lear Siegler or Monitor Labs ML9841,           |                               |                        |
| Philips PW9700                              | EQSA-0876-011                 | 511                    | ML9841A, Monitor Labs ML9841B,                 |                               |                        |
| Philips PW9755                              | EQSA-0676-010                 | 010                    | Wedding 1030                                   | RFNA-1292-090                 | 090                    |
| Thermo Electron 43                          | EQSA-0276-009                 | 009                    | Meloy NA530R                                   | RFNA-1078-031                 | 031                    |
| Thermo Electron 43A or Thermo               |                               |                        | Monitor Labs 8440E                             | RFNA-0677-021                 | 021                    |
| Environmental Instruments 43B, 43C          | EQSA-0486-060                 | 060                    | Monitor Labs or Lear Siegler 8840              | RFNA-0280-042                 | 042                    |
|   |                               |                        | Monitor Labs or Lear Siegler 8841              | RFNA-0991-083                 | 083                    |
| <b><u>O<sub>3</sub> Analyzers</u></b>       |                               |                        | Opsis AR 500, System 300 (open path)           | EQNA-0495-102                 | 102                    |
| Advanced Pollution Instr. 400/400A          | EQOA-0992-087                 | 087                    | Philips PW9762/02                              | RFNA-0879-040                 | 040                    |
| Beckman 950A                                | RFOA-0577-020                 | 020                    | Thermo Electron or Thermo                      |                               |                        |
| Bendix 8002                                 | RFOA-0176-007                 | 007                    | Environmental Instruments 14B/E                | RFNA-0179-035                 | 035                    |
| Columbia Scientific Industries 2000         | RFOA-0279-036                 | 036                    | Thermo Electron or Thermo                      |                               |                        |
| Dasibi 1003-AH, -PC, -RS                    | EQOA-0577-019                 | 019                    | Environmental Instruments 14D/E                | RFNA-0279-037                 | 037                    |
| Dasibi 1008-AH, -PC, -RS                    | EQOA-0383-056                 | 056                    | Thermo Environmental Instr. 42, 42C            | RFNA-1289-074                 | 074                    |
| DKK-TOA Corp. Model GUX-113E                | EQOA-0200-134                 | 134                    |  |                               |                        |
| Envionics 300                               | EQOA-0990-078                 | 078                    | <b><u>Pb Manual Methods</u></b>                |                               |                        |
| Environnement S.A. O <sub>4</sub> 1M        | EQOA-0895-105                 | 105                    | Reference method (hi-vol/AA spect.)            | --                            | 803                    |
| Environnement S.A. SANOA                    | EQOA-0400-137                 | 137                    | Hi-vol/AA spect. (alt. extr.)                  | EQL-0380-043                  | 043                    |
| Horiba APOA-360                             | EQOA-0196-112                 | 112                    | Hi-vol/Energy-disp XRF (TX ACB)                | EQL-0783-058                  | 058                    |
| Lear Siegler or Monitor Labs ML9810,        |                               |                        | Hi-vol/Energy-disp XRF (NEA)                   | EQL-0589-072                  | 072                    |
| Monitor Labs ML9810B, Wedding 1010          | EQOA-0193-091                 | 091                    | Hi-vol/Flameless AA (EMSL/EPA)                 | EQL-0380-044                  | 044                    |
| McMillan 1100-1                             | RFOA-1076-014                 | 514                    | Hi-vol/Flameless AA (Houston)                  | EQL-0895-107                  | 107                    |
| McMillan 1100-2                             | RFOA-1076-015                 | 515                    | Hi-vol/Flameless AA (Omaha)                    | EQL-0785-059                  | 059                    |
| McMillan 1100-3                             | RFOA-1076-016                 | 016                    | Hi-vol/ICAP spect. (Doe Run Co.)               | EQL-0196-113                  |                        |
| Meloy OA325-2R                              | RFOA-1075-003                 | 003                    | 113  |                               |                        |
| Meloy OA350-2R                              | RFOA-1075-004                 | 004                    | Hi-vol/ICAP spect. (EMSL/EPA)                  | EQL-0380-045                  | 045                    |
| Monitor Labs 8410E                          | RFOA-1176-017                 | 017                    | Hi-vol/ICAP spect. (Illinois)                  | EQL-1193-094                  | 094                    |
| Monitor Labs or Lear Siegler 8810           | EQOA-0881-053                 | 053                    | Hi-vol/ICAP spect. (Kansas)                    | EQL-0592-085                  | 085                    |
| Opsis AR 500, System 300 (open path)        | EQOA-0495-103                 | 103                    | Hi-vol/ICAP spect. (Montana)                   | EQL-0483-057                  | 057                    |
| PCI Ozone Corp. LC-12                       | EQOA-0382-055                 | 055                    | Hi-vol/ICAP spect. (NE&T)                      | EQL-1188-069                  | 069                    |
| Philips PW9771                              | EQOA-0777-023                 | 023                    | Hi-vol/ICAP spect. (New Hampshire)             | EQL-1290-080                  | 080                    |
| Thermo Electron or Thermo                   |                               |                        | Hi-vol/ICAP spect. (Pennsylvania)              | EQL-0592-086                  | 086                    |
| Environmental Instruments 49, 49C           | EQOA-0880-047                 | 047                    | Hi-vol/ICAP spect. (Pima Co.,AZ)               | EQL-0995-109                  | 109                    |
|   |                               |                        | Hi-vol/ICAP spect. (Pima Co.,AZ)               | EQL-0995-110                  | 110                    |
| <b><u>CO Analyzers</u></b>                  |                               |                        | Hi-vol/ICAP spect. (Rhode Island)              | EQL-0888-068                  | 068                    |
| Beckman 866                                 | RFCA-0876-012                 | 012                    | Hi-vol/ICAP spect. (Silver Val. Labs)          | EQL-1288-070                  | 070                    |
| Bendix 8501-5CA                             | RFCA-0276-008                 | 008                    | Hi-vol/ICAP spect. (TNRCC)                     | EQL-0400-140                  | 140                    |
| Dasibi 3003                                 | RFCA-0381-051                 | 051                    | Hi-vol/ICAP spect. (West Virginia)             | EQL-0694-096                  | 096                    |
| Dasibi 3008                                 | RFCA-0488-067                 | 067                    | Hi-vol/WL-disp. XRF (CA A&IHL)                 | EQL-0581-052                  | 052                    |
| Environnement s.a. CO11M                    | RFCA-0995-108                 | 108                    |  |                               |                        |
| Horiba AQM-10, -11, -12                     | RFCA-1278-033                 | 033                    | <b><u>PM<sub>10</sub> Samplers</u></b>         |                               |                        |
| Horiba 300E/300SE                           | RFCA-1180-048                 | 048                    | Andersen Instruments RAAS10-100                | RFPS-0699-130                 | 130                    |
| Horiba APMA-360                             | RFCA-0895-106                 | 106                    | Andersen Instruments RAAS10-200                | RFPS-0699-131                 | 131                    |

|   |               |     |
|---|---------------|-----|
| Andersen Instruments RAAS10-300                     | RFPS-0699-132 | 132 |
| BGI Model PQ100                                     | RFPS-1298-124 | 124 |
| BGI Model PQ200                                     | RFPS-1298-125 | 125 |
| Oregon DEQ Medium volume sampler                    | RFPS-0389-071 | 071 |
| Rupperecht & Patashnick Partisol 2000               | RFPS-0694-098 | 098 |
| R & P Partisol-FRM Model 2000                       | RFPS-1298-126 | 126 |
| R & P Partisol-Plus Model 2025 Seq.                 | RFPS-1298-127 | 127 |
| Sierra-Andersen/GMW 1200                            | RFPS-1287-063 | 063 |
| Sierra-Andersen/GMW 321-B                           | RFPS-1287-064 | 064 |
| Sierra-Andersen/GMW 321-C                           | RFPS-1287-065 | 065 |
| Sierra-Andersen/GMW 241 Dichot.                     | RFPS-0789-073 | 073 |
| Tisch Environmental Model TE-6070                   | RFPS-0202-141 | 141 |
| W&A/Thermo Electron Mod 600 HVL                     | RFPS-1087-062 | 062 |
| <b><u>PM<sub>10</sub> Analyzers</u></b>             |               |     |
| Andersen Instruments Beta FH621-N                   | EQPM-0990-076 | 076 |
| Met One BAM1020, GBAM1020,<br>BAM1020-1, GBAM1020-1 | EQPM-0798-122 | 122 |
| R & P TEOM 1400, 1400a                              | EQPM-1090-079 | 079 |
| W&A/Thermo Electron 650 Beta Gauge                  | EQPM-0391-081 | 081 |
| <b><u>PM<sub>2.5</sub> Samplers</u></b>             |               |     |
| Andersen Model RAAS2.5-200 Audit                    | RFPS-0299-128 | 128 |
| BGI PQ200/200A                                      | RFPS-0498-116 | 116 |
| BGI PQ200-VSCC or PQ200A-VSCC                       | EQPM-0202-142 | 142 |
| Graseby Andersen RAAS2.5-100                        | RFPS-0598-119 | 119 |
| Graseby Andersen RAAS2.5-300                        | RFPS-0598-120 | 120 |
| R & P Partisol-FRM 2000 PM-2.5                      | RFPS-0498-117 | 117 |
| R & P Partisol-FRM 2000 PM-2.5 FEM                  | EQPM-0202-143 | 143 |
| R & P Partisol 2000 PM-2.5 Audit                    | RFPS-0499-129 | 129 |
| R & P Partisol 2000 PM-2.5 FEM Audit                | EQPM-0202-144 | 144 |
| R & P Partisol-Plus 2025 PM-2.5 Seq.                | RFPS-0498-118 | 118 |
| R & P Partisol-Plus 2025 PM-2.5 FEM Seq.            | EQPM-0202-145 | 145 |
| Thermo Environmental Model 605 CAPS                 | RFPS-1098-123 | 123 |
| URG-MASS100   | RFPS-0400-135 | 135 |
| URG-MASS300   | RFPS-0400-136 | 136 |
| <b><u>TSP Manual Method</u></b>                     |               |     |
| Reference method (high-volume)                      | --            | 802 |